

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown below. The listing of the claims below replaces all prior versions of the claims.

Listing of the Claims:

1. (Currently Amended) A method for detecting or quantitating gene expression in a sample, said sample believed to have ~~one or more~~ a plurality of different types of unlabeled target ~~ribonucleic acids~~, each ~~ribonucleic acid~~ type of target nucleic acid having an a 3' polyadenylyl oligonucleotide tail, said method comprising:

providing a substrate having a plurality of types of capture nucleic acid sequences attached thereto in an array for the detection of ~~multiple portions of a target~~ said ~~ribonucleic acid~~ targets, ~~the detection of multiple different target nucleic acids, or both;~~

providing nanoparticles having oligonucleotides bound thereto, the oligonucleotides bound to the nanoparticles having a sequence that is complementary to at least a portion of the ~~oligonucleotide~~ polyadenylyl tail;

contacting the sample, the substrate, and the nanoparticles, said ~~contacting~~ contracting occurring under conditions effective for hybridization of the target ~~ribonucleic acids~~ to the capture nucleic acid sequences bound to the substrate and hybridization of the target ~~ribonucleic acids~~ to the nanoparticles; and

observing a detectable change.

2. (Currently Amended) The method of claim 1 wherein the ~~target nucleic acid is RNA or DNA~~ array of capture nucleic acids are complementary to more than one portion of any given target ribonucleic acid in said sample.

3.5 (Canceled)

6. (Currently Amended) The method of claim 1 wherein the oligonucleotides bound to the nanoparticles comprise a ~~poly dT, a poly dA, or a synthetic oligonucleotide having a predetermined sequence~~ nucleic acid sequence that is capable of hybridizing with the polyadenylyl tail of the target ribonucleic acids.

7. (Original) The method of claim 1 wherein the capture nucleic acid sequences comprise an oligonucleotide, cDNA, or genomic sequence fragment.

8. (Original) The method of claim 1 wherein the sample is first contacted with the substrate, said contacting occurring under conditions effective for hybridization of the target nucleic acids with the capture nucleic acid sequence bound to the substrate, and then contacting the target nucleic acid bound to the substrate with the nanoparticles, said contacting occurring under conditions effective for hybridization of the target nucleic acids bound to the substrate with the oligonucleotides bound to the nanoparticles.

9. (Original) The method of claim 1 wherein the sample is first contacted with the nanoparticles, said contacting occurring under conditions effective for hybridization of the target nucleic acids with the oligonucleotides bound to the nanoparticles, and then contacting the target nucleic acid bound to the nanoparticles with the substrate, said contacting occurring under conditions effective for hybridization of the target nucleic acids bound to the nanoparticles with the capture nucleic acid sequences bound to the substrate.

10. (Original) The method of claim 1 wherein the sample, nanoparticles and substrate are contacted simultaneously under conditions effective for hybridization of the target nucleic acids with the oligonucleotides bound to the nanoparticles and with the capture nucleic acid sequences bound to the substrate.

11. (Original) The method of claim 1 wherein the nanoparticles are made of gold.

12. (Original) The method of claim 1 wherein the detectable change is observed after contacting the substrate having target nucleic acids and nanoparticles with a staining material.

13. (Original) The method of claim 12 wherein the staining material is silver stain.

14.-20. (Canceled)

21. (Currently Amended) A method for detecting or quantitating gene expression in a sample, said sample believed to have ~~one or more different~~ a plurality of types of target cDNAs, each type of target cDNA including either a polydeoxythymidylyl-poly-dT oligonucleotide tail or a synthetic oligonucleotide tail having a predetermined sequence, ~~or both,~~ said method comprising:

providing a substrate having a plurality of types of capture nucleic acid sequences attached thereto in an array for the detection of ~~multiple portions of a target ribonucleic acid, the detection of multiple different target ribonucleic acids~~ cDNAs, ~~or both;~~

providing one type of nanoparticles having oligonucleotides bound thereto—, the oligonucleotides bound to the nanoparticles having a sequence that is complementary to at least a portion of the polydeoxythymidylyl tail ~~poly-dA oligonucleotides~~ or synthetic oligonucleotides tail having a predetermined sequence;

contacting the sample, the substrate, and the nanoparticles, said ~~contacting~~ contracting occurring under conditions effective for hybridization of the target cDNAs to the capture nucleic acid sequences bound to the substrate and hybridization of the target cDNAs to the nanoparticles; and ~~contacting the nanoparticles bound to the support with a staining material to produce a detectable change; and~~

observing ~~the~~ a detectable change.

22. (Original) The method of claim 21 wherein the sample is first contacted with the substrate, said contacting occurring under conditions effective for hybridization of the target cDNAs with the capture nucleic acid sequences bound to the substrate, and then contacting the target cDNAs bound to the substrate with the nanoparticles, said contacting occurring under conditions effective for hybridization of the target cDNAs bound to the substrate with the oligonucleotides bound to the nanoparticles.

23. (Original) The method of claim 21 wherein the sample is first contacted with the nanoparticles, said contacting occurring under conditions effective for hybridization of the target cDNAs with the oligonucleotides bound to the nanoparticles, and then contacting the target cDNAs bound to the nanoparticles with the substrate, said contacting occurring under conditions effective

for hybridization of the target cDNAs bound to the nanoparticles with the capture nucleic acid sequences bound to the substrate.

24. (Original) The method of claim 21 wherein the target cDNAs, nanoparticles and substrate are contacted simultaneously under conditions effective for hybridization of the target cDNAs with the oligonucleotides bound to the nanoparticles and with the capture nucleic acid sequences bound to the substrate.

25. (Original) The method of claim 21 wherein the nanoparticles are made of gold.

26. (Canceled)

27. (Original) The method of claim 21 wherein the capture nucleic acid sequences comprise an oligonucleotide, cDNA, or genomic sequence fragment.

28. (Currently Amended) A kit for detecting or quantitating gene expression in a sample, said sample believed to have one or more different types of unlabeled target nucleic acids, each type of target nucleic acid including either a polydeoxythymidylyl tail, poly-dT, a polyadenylyl tail, or poly dA oligonucleotide tail, or a synthetic oligonucleotide tail having a predetermined sequence, said kit comprising:

a substrate having a plurality of types of capture nucleic acid sequences attached thereto in an array for the detection of multiple ~~portions of a target nucleic acid, the detection of multiple different target nucleic acids, or both~~; and

one or more types of nanoparticles having bound thereto oligonucleotides that are capable of hybridizing with the polyadenylyl tail, the polydeoxythymidylyl tail, or the poly dT oligonucleotides, poly dA oligonucleotides, or synthetic oligonucleotide tails having a predetermined sequence.

29. (Original) ~~The kit.~~The method of claim 28 wherein the nanoparticles are made of gold.

30. (Original) ~~The kit.~~The method of claim 28 wherein the capture nucleic acid sequences comprise an oligonucleotide, cDNA, or genomic sequence fragment.

31. (New) The method of claim 6 wherein said nucleic acid sequence contains ribonucleotides, deoxyribonucleotides, modified nucleotides, PNA or a mixture thereof.
32. (New) The method of claim 21 wherein the detectable change is observed after contacting the substrate having target nucleic acids and nanoparticles with a staining material.
33. (New) The method of claim 22 wherein the staining material is silver stain.